


**E-MAIL NOTIFICATION  
OF  
POSTAL DELIVERY  
UNIVERSITY UTARA MALAYSIA**

**Hosam I. Faiq**

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**2008**

**E-MAIL NOTIFICATION  
OF  
POSTAL DELIVERY  
UNIVERSITY UTARA MALAYSIA**

A thesis submitted to the Graduate School in partial fulfillment of the  
requirements for the degree Master of Science (Information Technology)  
Universiti Utara Malaysia

By

**Hosam I. Faiq**

**(88973)**

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## **ABSTRACT**

With E-mail notification for postal delivery UUM services can be obtained easily way and flexibility to access the post info at any time in any location. This research introduces a prototype “E-mail notification for postal delivery UUM” that provides the students with the service of the post notification to them UUM Emails in order to reduce the time and the effort for the students. By using this prototype, students can easily get necessary information them post info by using the tracking umber that provide by the officer to obtain to the student for checking. So, they can save their time and effort by check them post online.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Introduction**

This research describes the ability to notify users about postal delivery information through e-mail. Thus e-mail notification service allows a selection process to determine which of the e-mail notifications are of interest to students, routing and delivering notifications only to the students that are interested. Mails is a type of postal that as written documents, typically enclosed in envelopes and also the small packages or parcels which are delivered to the far distance around the world, but the Malaysia Postal Service(Post Malaysia Berhad) are classify behind UPS, DHL and FedEx using current ICT technology. Post Malaysia Berhad (BMP) dose not provide services such as allow consumer to locate mail by telephone or internet. The researcher would like to investigate and inspect on the new technique that provide the flexibility to find the data of the students, and to use that information as the basis for optimizing mail notification delivery. In the referring not simply to the number of mail generators, the number of mail notifications, and the number of mail notification recipients. Malaysia Berhad (BMP) recognize that there are other important attributes of an e-mail notification services, including security, reliability, and fault tolerance, but it is not address them in this paper.

The contents of  
the thesis is for  
internal user  
only



- Need to provide the domain for sending the e-mail to make it possible to send through website.
- The prototype system was developed for and tested on Microsoft Internet Explorer 6.0 browser, therefore some of the test and illustration may be inconsistency on other web browser such as Netscape Navigator 4.0 and Opera 6.0 that need to identify the system requirement.
- The prototype is just simulating on the local PC. It has not been uploaded to the real website due to high airtime cost for testing and time constraints

### **5.3 Future Work**

Due to the time constraint the entire functionalities proposed for the system, could not be development entirely future works can be carried out to fill in the deficits that came upon during the work of this project. It would be more suggestive to advise those who want to pursue with this project to do the following:

- Design a mobile mail notification
- To integrate the use of bar code reader to improve the delivery service.
- To apply the proposed system at local post offices branches and improve its features.

## REFERENCES

- [1] Cynthia A. Murnan .Expanding communication mechanisms: they are not just e-mailing anymore, 2006, ACM.
- [2] Vernon S. Stroupe .POSTAL HISTORY - THE BASICS, Assessed on 12 February 2008.
- [3]History of the United States Post Service 1775-1993, Assessed on 15 March 2008, ([http://www.usps.com/history/history/his3\\_5.htm](http://www.usps.com/history/history/his3_5.htm)).
- [4]Postage stamp, from Wikipedia, Assessed on 22 March 2008, ([http://en.wikipedia.org/wiki/Postage\\_stamp](http://en.wikipedia.org/wiki/Postage_stamp)).
- [5] Sowinski L., Air Cargo Looks for "Open Skies", October 2007, p. 24.
- [6]Postal Services History, Ancient and Medieval Service, assessed on 25 February 2008, (<http://www.lookd.com/postal/history.html>).
- [7] Linns Weekly Stamp News, "'Father of 3-cent Stamp' Spooner fought Post Office", Feb-March 1983, retrieved 10 Oct 2007.
- [9] Sawhney M., and Zabin J., The Seven Steps to Nirvana: Strategic Insights into business Transformation, McGraw-Hill (2001).
- [10] HONGJUN SONG, E-SERVICES AT FEDEX, Jun 2003, ACM.
- [11] Michael G., Burkhard F., Intelligent Creation of Notification Events  
In Information Systems - Concept, Implementation and Evaluation, February 2005,  
ACM.
- [12] Abu- Hakima, S., McFarland, C., & Meech, J. F. A system for e-mail highlighting. In Proc. AGENTS agent-based 2001 ACM Press (2001), 224- 225.
- [13] FedEx Corporation, from Wikipedia, Assessed on 29 February 2008.
- [14]Fed Ex company history, Assessed on 22 January 2008, ([http://www. Fundinguniverse.com](http://www.Fundinguniverse.com)).
- [15] United States Postal Service, Wikipedia, assessed on 22 March 2008.
- [16] Kelly B. Olds, The Cato Journal, THE CHALLENGE TO THE U.S. POSTAL MONOPOLY, 1839-1851, retrieved 10 Oct 2007.
- [17] United States Postal Serv. v. Flamingo Indus. (USA) Ltd., 540 U.S. 736 (2004).
- [18] Pos Malaysia Berhad Kedah Perils, Assessed on 21 January 2008,  
([www.pos.com.my](http://www.pos.com.my)).
- [19] Francesco G., Laura A., Marina B., Maria G., Mangiaracina, Experience in implementing a document delivery service, August 2005, ACM.
- [20] NORTHEASTERN UNIVERSITY, Office of University Mail Services, Assessed on  
17 January 2008.

- [21] Mellon University, Mellon Post Delivery, Assessed on 20 January 2008, (<http://www.cmu.edu/postoffice/hints.html>).
- [22] Hasler Organization, Hasler.Mailing Systems and Solutions, Assessed on 21 January 2008 ([www.haslerinc.com](http://www.haslerinc.com)).
- [23] Laura A., Robert E., Susan F., Sara K., Understanding E-mail Use: Predicting Action on a Message, 2005 ACM. Page (691- 692).
- [24] Inventor of the Week: Art F. and Stephen S.. MIT. Assessed on 2007-09-23.
- [25] Processing mail in transit: the Railway Mail Service and railway post offices ,Assessed on 24 February 2007.
- [26] UNIVERSITY MAIL SERVICE, Types of Outgoing Mail, Assessed on 19 March 2008. (<http://www.utbtsc.edu/hoop/files/s11-4.pdf>).
- [27] SELECTING TYPE OF SERVICE. A. Definitions of Types of U.S. Mail, Assessed on 19 March 2008, (<http://usable.uwstout.edu/bfs/pmm/mailservice/type.pdf>).
- [28] Young Graduate Alumni Trustees Proposal of Princeton University, Lauren H., David L., Karthick R., Executive Committee of the CPUC ,September 2000.
- [29]Whittaker, S., & Hirschberg, J. The character, value, and management of personal paper archives. ACM TOCHI 8, 2, (2001), 150- 170.
- [30]Kothari, C. R. (1985). Research Methodology, Methods and Technique. Delhi: Wiley Eastern Limited.
- [31]Valacich, J. S., George, J. M. & Hoffer, J. A. (2004). Essential of Systems Analysis and Design. New York: Prentice Hall.
- [32]Hoffer, J. A., George, J. F & Valacich, J. S. (1999). Modern Systems Analysis and Design (2nd Edition). United Kingdom: Addison Wesley Longman.
- [33]Hoffer, J. A., George, J. F & Valacich, J. S. (2004). Modern Systems Analysis and Design (Third Edition). United Kingdom: Addison Wesley Longman.
- [34] Whitten, Bentley and Dittman, Systems Analysis and Design Methods, Mc Graw Hill, 5<sup>th</sup> Edition, 2006.
- [35] Waterfall model methodology, System Development Life Cycle, Assessed on 19 January 2008, (<http://www.startvbdotnet.com/sdlc/sdlc.aspx>).
- [36] Addison Wesley Longman ,Bahrami. (1999). Modern Systems Analysis and Design (2nd Edition). United Kingdom.
- [37]Kothari, C. R. (1985). Research Methodology, Methods and Technique. Delhi: Wiley Eastern Limited.

- [38] James R., Ivar J., and Grady B., Addison-Wesley, the Unified Modeling Language Reference Manual, Second Edition 2005.
- [39] UML Second Edition, Superstructure Final Adopted specification, Assessed on 05 January 2008, August 1995, (<http://www.omg.org>).
- [40] Martin F., Addison-Wesley, UML Distilled Third Edition, 2004.
- [41]. Kalata, K., Introduction to ASP.NET, Boston: Thomson: Course Technology, 2003.
- [42]Introduction to Microsoft .Net Platform, Microsoft Internet Explorer, Accessed on 22 April 2008, (<http://www.asp101.com/articles/nakul/intronet/default.asp>).
- [43] A. Zerzelidis and A.J. Wellings, requirements for a Real-Time .NET Framework, Feb 2005, ACM SIGPLAN Notices.
- [44] Craig A., John D, CREATING WEB SERVICES USING ASP.NET, CCSC: Rocky Mountain Conference, 2004.
- [45] Chonoles, Michael J. , James A. Schardt . UML 2 for Dummies. Wiley Publishing 2003.
- [46]Robert C. Martin (2003).Class Diagrams, Assessed on 10 Sep 2007 from (<http://www.objectmentor.com/resources/articles/umlClassDiagrams.pdf>).
- [47] Holcomb & Tharp. (1991). User a Software Usability Model and Product Evaluation. Interacting with Computers. Vol 3 (2). United Kingdom: Oxford.
- [48] Connolly T., Begg C. (2002). Database system - A practical approaches to Design, Implementation and Management (3ed.). Essex: Addison-Wesley
- [49] Patric, L. (2004). Guidelines to Design a Web Page. Canada: Wrox Press.
- [50] Rubin, J. (2004). Handbook of Usability Testing: How to Plan, Design and Conduct Effective Tests. London: John Wiley & Sons.
- [51] Paul D. Sheriff (2006) Fundamentals VB.NET retrieved 13 Sep 2007 from ([http://pdsa.com/Download/eBook/Preview\\_57.pdf](http://pdsa.com/Download/eBook/Preview_57.pdf)).